WebObjects
Technical Overview

Session 603

WebObjects Technical Overview

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Introduction

- Power
- Elegance
- Sophistication
- Productivity
- Fun!

What You'll Learn

- What WebObjects is
- What you can do with WebObjects
- Building blocks and tools
- Behind the scenes
- How to learn!

What Is WebObjects?

What Is WebObjects?

- “Software composed of frameworks and tools that help you build network applications with data from multiple data sources.”
- Fundamentally, an application server

WebObjects Advantages

- Lets you focus on writing business logic
- Faster time to market through reusability
- Development cycle offers opportunities for customer feedback throughout

An Application Server

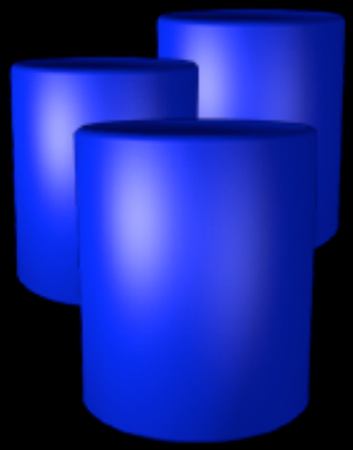
- Provides a service on the Web
- Presents data from multiple data sources
- Users “consume” that data
- Applications exchange and share data

Data Sources

Application Servers

Web Servers

Web Clients



JDBC and JNDI

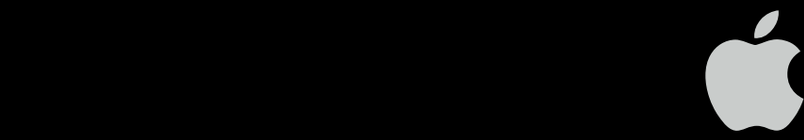
Application Servers

Web Servers

What You Can Do with WebObjects

Any Type of Network Client

- Out-of-the-box:
  - HTML
  - Swing
  - SOAP
  - XML
  - SMIL
- Through Java libraries:
  - PDF
  - SVG



Any Type of Data Source

- JDBC and JNDI data sources
- Access data sources through Java objects
- Business logic expressed in Java objects
- Enabled via the Enterprise Objects Frameworks

WebObjects HTML Applications

- Provide dynamic content to web browsers
- Pages are built with templates
- Templates are built on a proven component model
- Flexible integration with Java Server Pages

Apple .Mac Welcome

http://www.mac.com/

Google

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Home Account Logout Help

.mac

Mail Address Book iDisk HomePage Backup iCards Anti-Virus Support

Hi, **brentshank**
Log in
Not You? Click here

.Mac Downloads
Get the latest software, utilities, and member specials in one convenient place.

.Mac Newsletter
Read the current issue of the .Mac Connection member newsletter.

Feedback
Have a suggestion on how to make .Mac even more useful? Give us your feedback and comments.

.Mac FAQ

Announcing .Mac Presents

Here's your chance to explore more of the .Mac services. The new five-part .Mac Presents series offers practical tips, creative ideas, and QuickTime movies that will help you get the most out of .Mac. We're putting up a new topic every few weeks—check the Learning Center often to see the latest one.

.Mac Presents: HomePage

The first .Mac Presents offers suggestions for using HomePage to share movies, photos, family news—even your resume. You'll discover that HomePage lets you:

- Create an attractive online photo album, going from iPhoto to the web in just a few clicks
- Post your digital movies quickly and easily
- Give people who visit your pages a way to send feedback

What's New

Freeverse Deluxe Board Games (April 10)

Mac OS X Jaguar training (March 19)

iDisk Utility for Windows XP (February 25)

Aladdin DropStuff™ and Stuffit Deluxe (February 13) This offer extended through June 17!

Virex 7.2 with eUpdate (February 6)

See all the latest updates.

Learning Center

How To's
Check out our step-by-step guides for exploring .Mac.

.Mac Presents
Discover real world uses for .Mac.

Display a menu

The Apple Store (U.S.)

http://store.apple.com/1-800-MY-APPLE/WebObjects/Ap

Google

Store | Music | .Mac | QuickTime | Support | Mac OS X

Your Account | Current Order | Saved Orders | Order Status | Help

Apple Store

All Products

Interests. . .

- Education
- Business
- Government
- Worldwide
- Photos
- Music
- Movies
- Switch

Apple Products

- Apple Software
- iPod
- iMac
- eMac
- iBook
- PowerBook
- Power Mac G4
- Apple Displays
- Xserve
- Xserve RAID
- .Mac
- AirPort
- AppleCare

Third Party Products

The all-new iPod.

7,500 songs in your pocket.
For Mac and Windows.

Add custom laser engraving for just $19 — perfect for gifts.

FREE SHIPPING

Portables iBook + PowerBook G4

12-inch | 14-inch | 12-inch | 15-inch | 17-inch

iBook from $999 | PowerBook from $1,799

iPod

iPod from $299

Desktops iMac + eMac

eMac from $799

iMac from $1,299

Power Mac G4 + Displays

Power Mac from $1,499

Displays from $699

Apple Software

Welcome, Brent

- Review Your Account
- Check Order Status
- Sign up for 1-Click

Top Sellers

1. iPod
2. Belkin TuneCast
3. PowerBook 12"
4. Belkin iPod Auto Charger
5. Mac OS X v10.2
6. Canon i450 Printer
7. iLife
8. Belkin iPod Battery Pack
9. DiskWarrior OS X
10. Monster iSplitter

More...

New to the Store

- Norton AntiVirus 9
- eMac
- Epson Photo 900 Printer
- Unreal Tournament
- Finding Nemo
- Intellihance 4.1
- Mask Pro 3.0
- PhotoFrame 2.5
- Portfolio 6.1
- Move2Mac Parallel

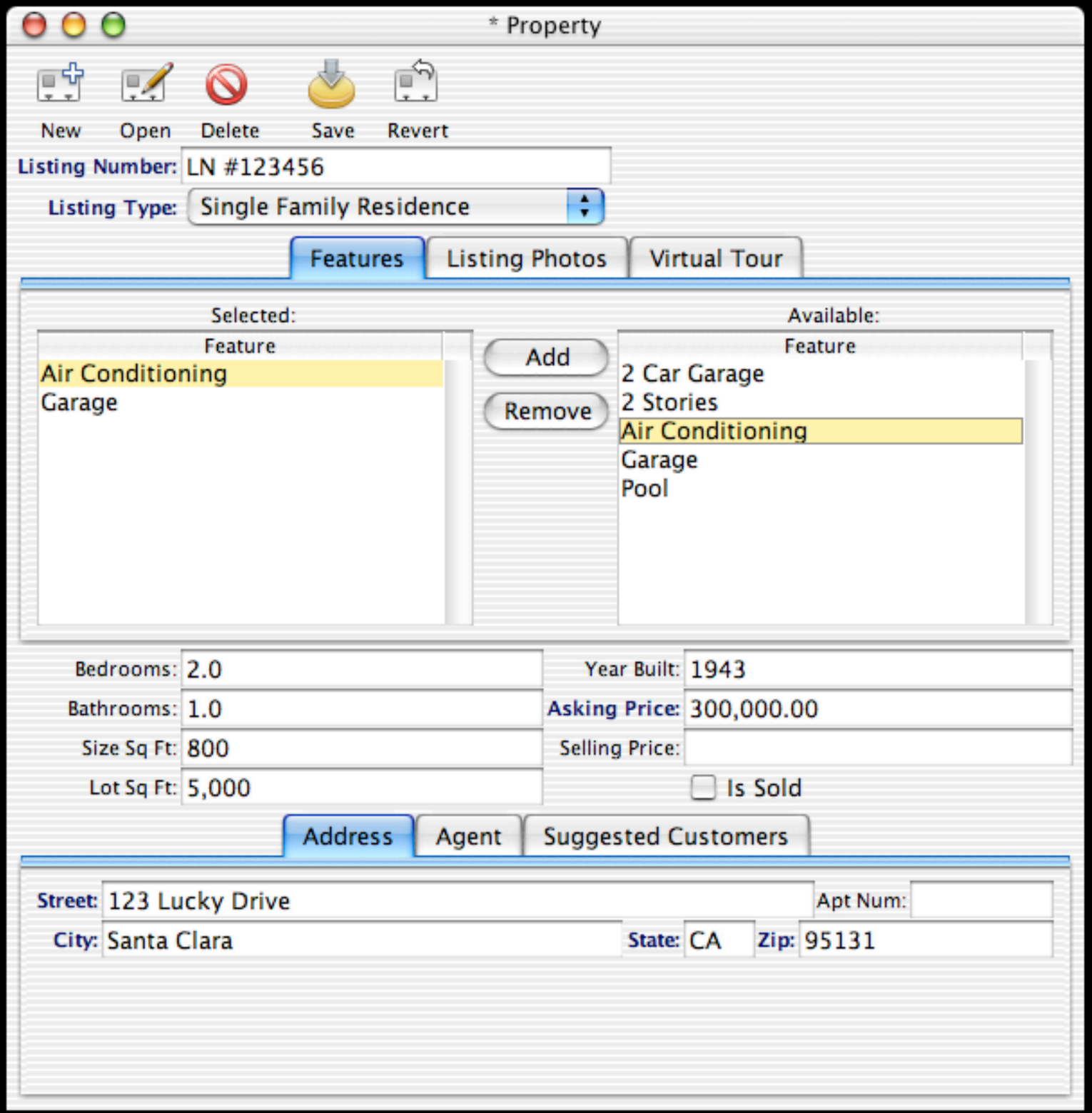
More...

Web Service Applications

- Vend database content through web services
- Consume web services as a client
- Frameworks provide abstraction to Apache AXIS
- Plugins for custom serialization of objects

WebObjects Java Client

- Provide dynamic content to Swing desktop applications
- Multiple architectures
- Dynamic user interface generation
- Sophisticated business logic distribution architecture
- Intelligent Web Start integration


* Property
New
Open
Delete
Save
Revert
Listing Number: LN #123456
Listing Type: Single Family Residence
Features
Listing Photos
Virtual Tour
Selected:
Feature
Air Conditioning
Garage
Add
Remove
Available:
Feature
2 Car Garage
2 Stories
Air Conditioning
Garage
Pool
Bedrooms: 2.0
Bathrooms: 1.0
Size Sq Ft: 800
Lot Sq Ft: 5,000
Year Built: 1943
Asking Price: 300,000.00
Selling Price:
Is Sold
Address
Agent
Suggested Customers
Street: 123 Lucky Drive
Apt Num:
City: Santa Clara
State: CA
Zip: 95131

Other Uses—XML-driven Application

Other Uses—Static Site

WebObjects Developer Documentation

WebObjects Documentation

WebObjects is Apple's suite of tools and object-oriented frameworks for creating and deploying scalable, reusable web and Java applications. WebObjects provides an application server with tools, technologies, and capabilities to create Internet and intranet applications. WebObjects is extremely scalable and supports high transaction volumes. WebObjects is the Apple way to develop, deploy and extend standards-based web services without writing low-level SOAP, XML or WSDL. Tools enable code-free generation, configuration and testing of web services from existing data assets.

WebObjects Resources

WebObjects Fundamentals
WebObjects Overview

WebObjects API Reference
API Differences from 5.1
WebObjects API Reference

New WebObjects Documentation

Deploying Applications
2003-04-01

What is New in WebObjects 5.2
2003-03-01

Enterprise Objects
2003-02-01

XML Serialization
2003-02-01

Enterprise JavaBeans
2003-01-01

Application Properties
2002-12-01

Other Resource Types

Document Descriptions
On Off

Title	Publication Date
Deploying Applications (HTML) (PDF) Teaches how to deploy applications using the facilities included with the WebObjects Deployment package. Addresses application administration and performance-improving practices.	2003-04-01
What is New in WebObjects 5.2 (HTML) (PDF)	2003-03-01

Demo:

Database to Prototype

Tools

Project Builder

- Organize
- Compile
- Debug
- CVS integration
- Documentation lookup
- New project assistants
- Rapid turnaround

EOModeler

- Build data models
- Reverse engineer models from existing data sources
- Create schemas from models
- A “front end” to the Enterprise Object Frameworks

EOModeler

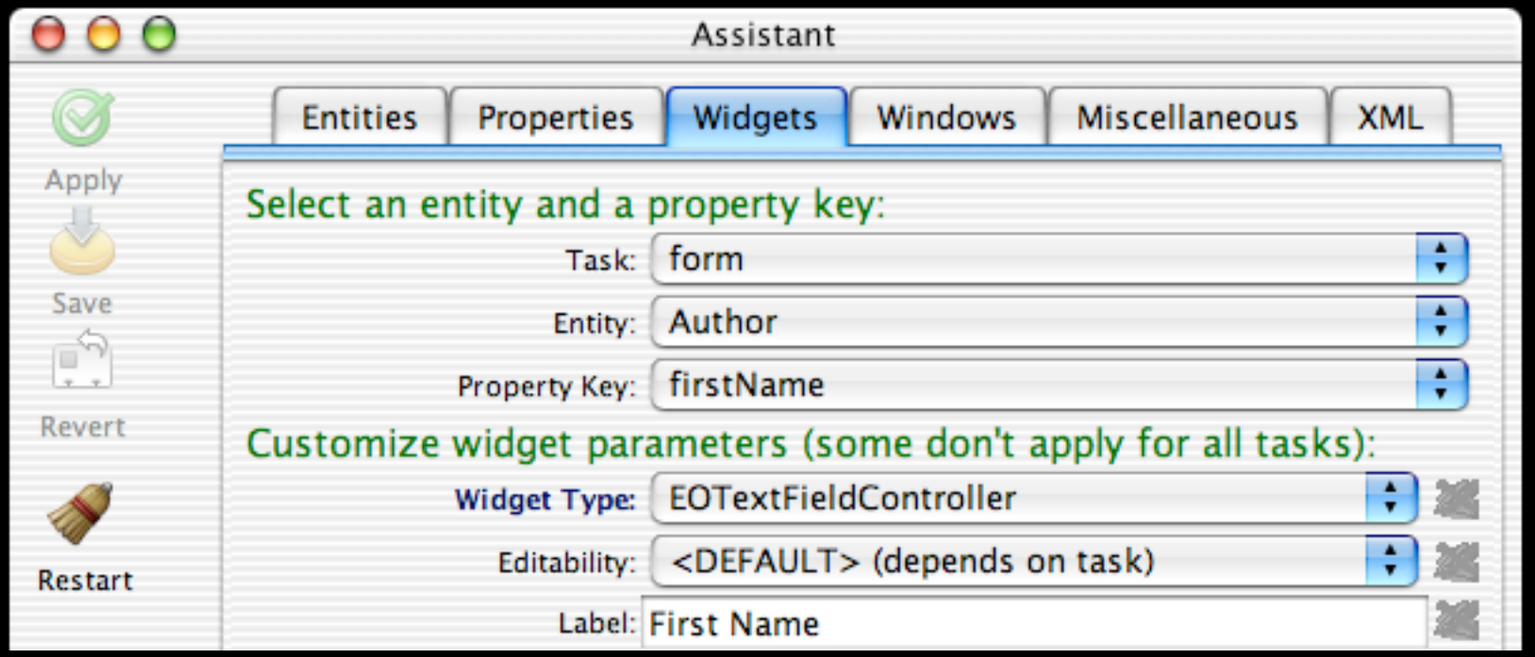
- Map relational data structures to Java objects
- Map entities to tables, attributes to columns, relationships to joins
- Model inheritance
- Build fetch specifications with qualifiers and sort orderings

WebObjects Builder

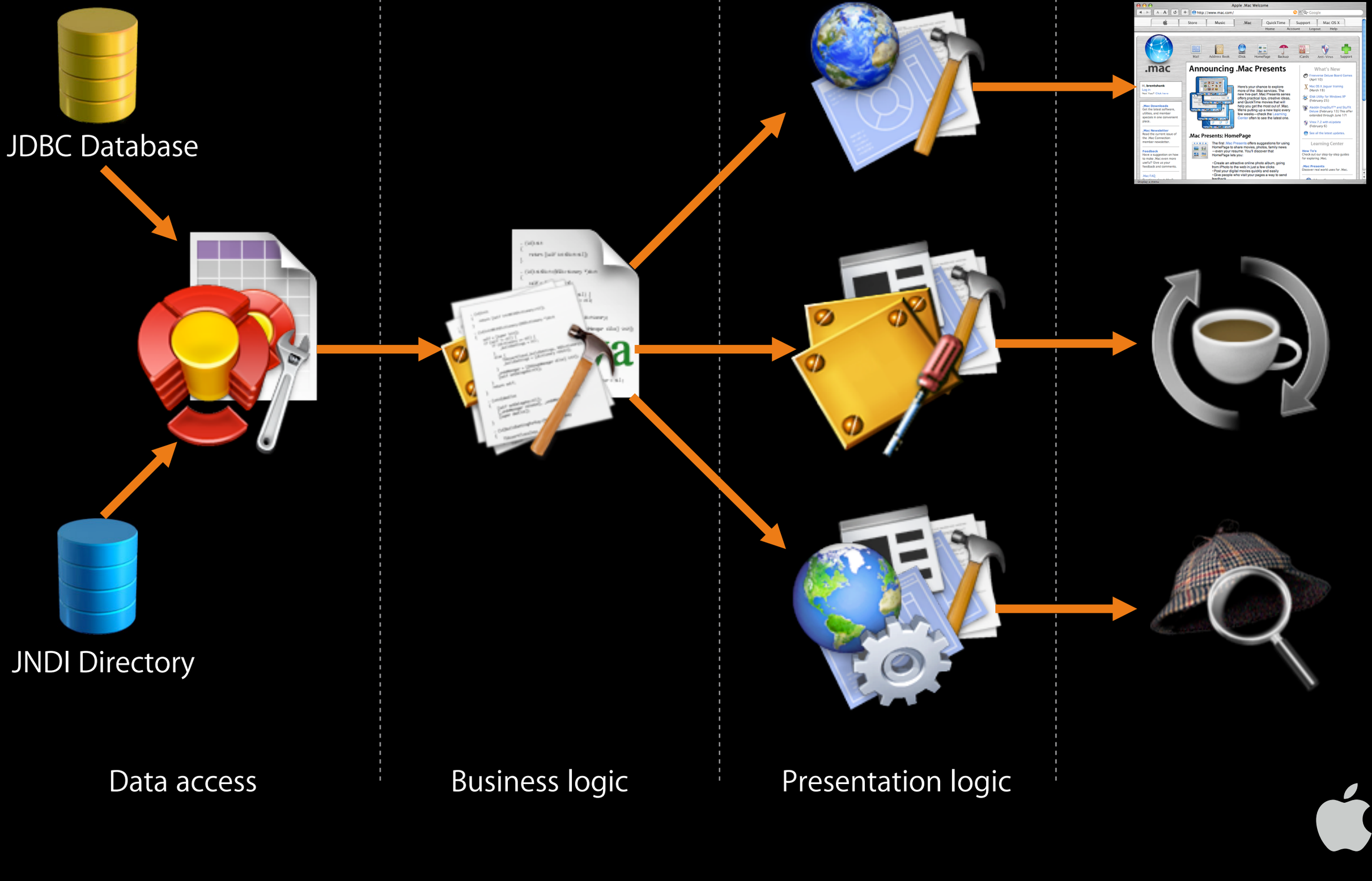
- Build HTML page templates with dynamic elements
- HTML editor
- Integration with Enterprise Objects
- Palettes of prebuilt, reusable elements
- Rapid turnaround

Rapid Development Tools

- Web Services Assistant
- Direct to Web Assistant
- Direct to Java Client Assistant
- Enable code-free, rule driven applications



Development Workflow



Demo:
Web Services

Building Blocks

Frameworks

- Provide prebuilt functionality that you plug into
- Do the driving and all the “heavy lifting”
- Incorporate “best practices” of object-oriented programming:
  - Key-value coding
  - Delegation
  - Model-View-Controller

Foundation Framework

- Powerful, fast, proven collection and utility classes
- Complement JDK classes
- Notification architecture
- Validation infrastructure
- XML serialization classes

WebObjects Framework

- Bootstraps all types of applications
- Manages request-response loop
- Provides reusable objects for page templating
- Manages state: application, session, page

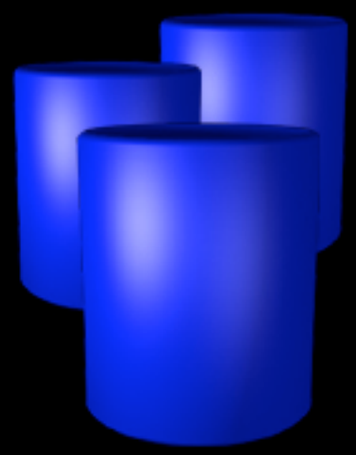
Enterprise Objects Frameworks

- Entity-relational modeling; Object-relational mapping
- Takes care of SQL, JDBC, JNDI, and other low-level code
- Java business objects
- Java invocations result in SELECTs, INSERTs, UPDATEs
- Business objects are “enterprise objects”
- Enterprise objects live in an “editing context”

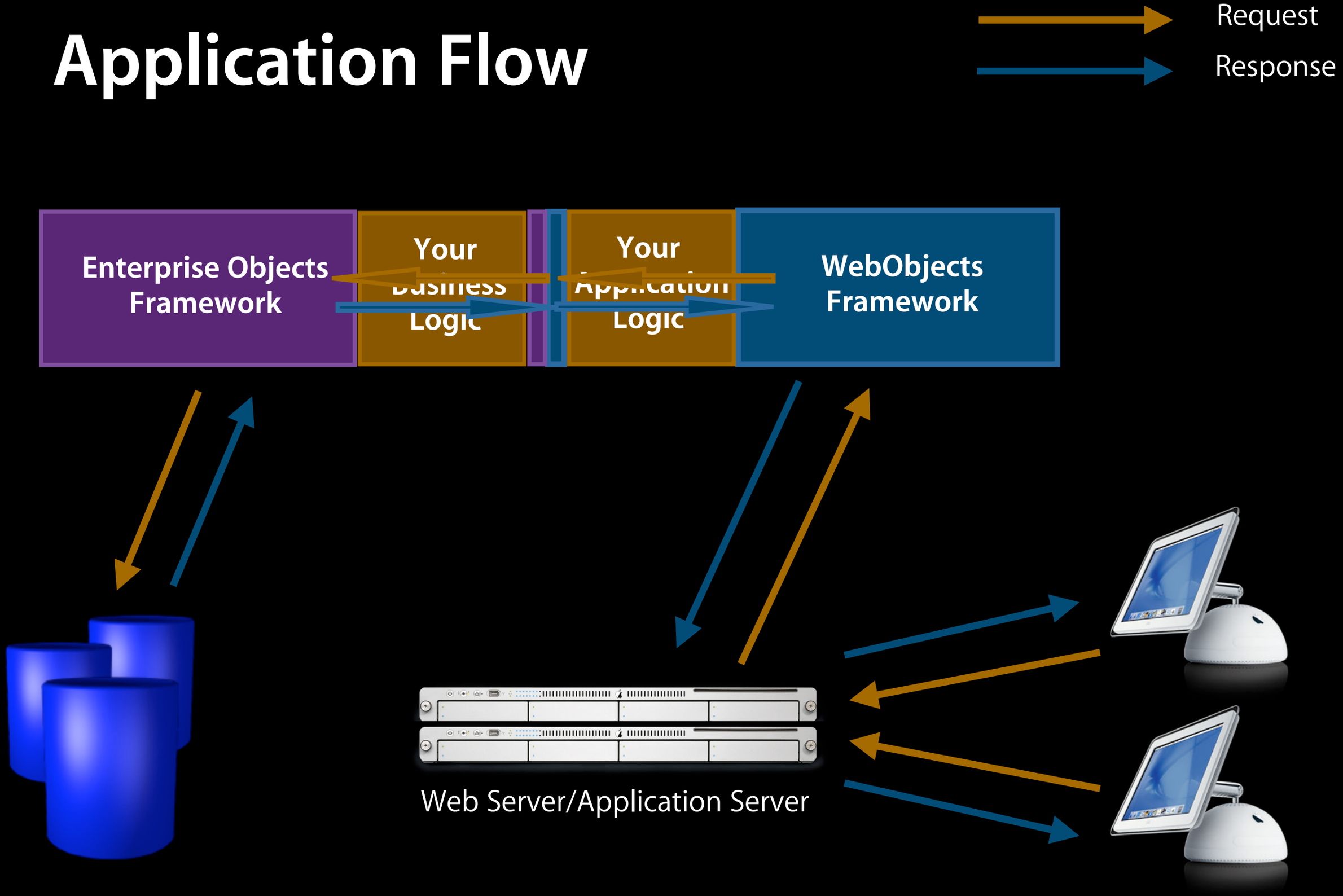
Enterprise Objects Frameworks

- High-level qualifier language
- Transparent management of joins
- Key paths: address.street, listing.agent.firstName
- Use multiple data sources within an application
- Validation infrastructure (on properties and operations)
- Inheritance

Frameworks and Your Code



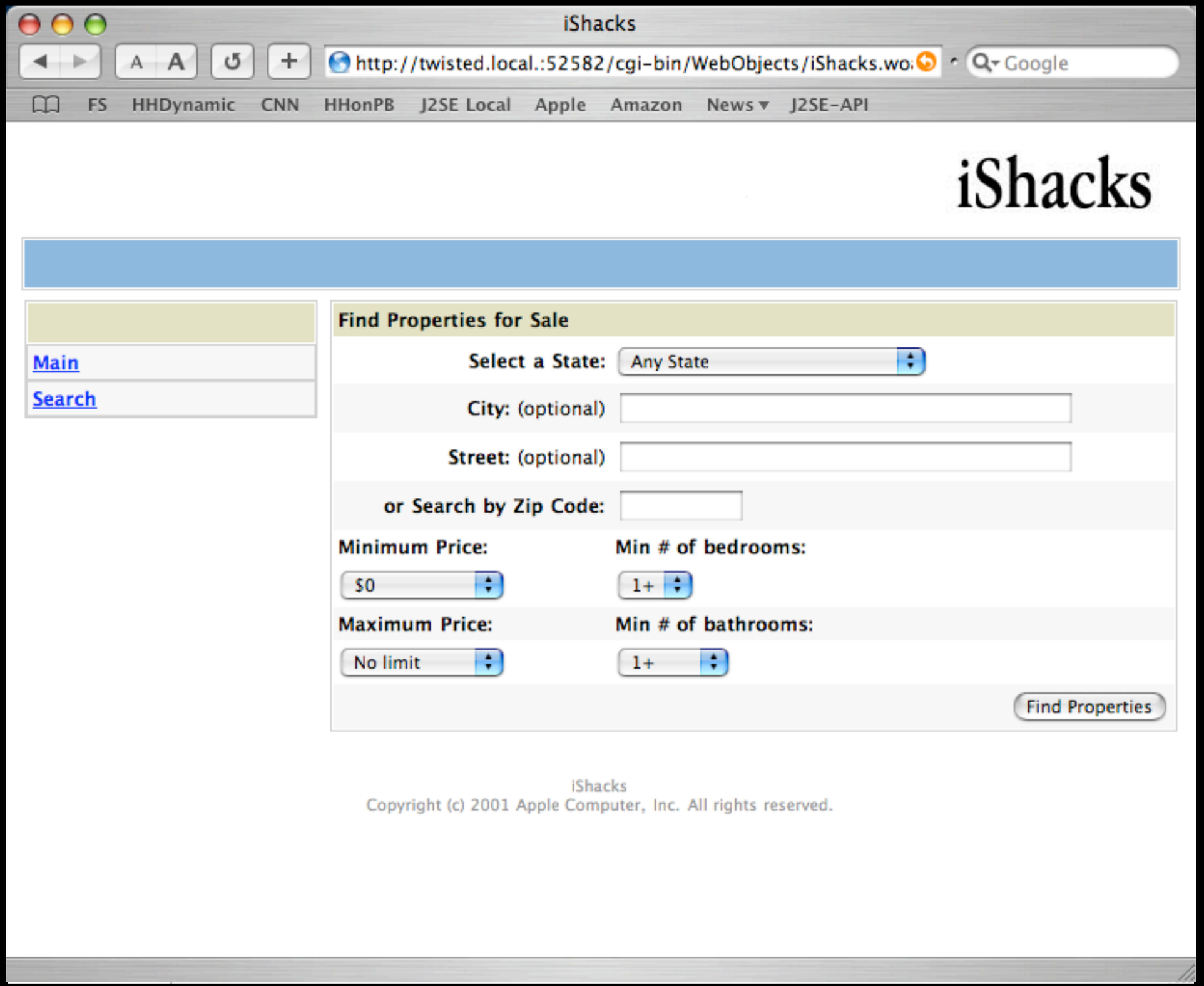
Application Flow



Rapid Development Frameworks

- Direct to Web
- Direct to Java Client
- Direct to Web Services
- Based on a simple expert system: the rule system
- All the details in Session 609: Rapid Application Development

Behind the Scenes


iShacks
http://twisted.local.:52582/cgi-bin/WebObjects/iShacks.wo
Google
FS
HHDynamic
CNN
HHonPB
J2SE Local
Apple
Amazon
News
J2SE-API
iShacks
Main
Search
Find Properties for Sale
Select a State:
Any State
City: (optional)
Street: (optional)
or Search by Zip Code:
Minimum Price:
$0
Min # of bedrooms:
1+
Maximum Price:
No limit
Min # of bathrooms:
1+
Find Properties
iShacks
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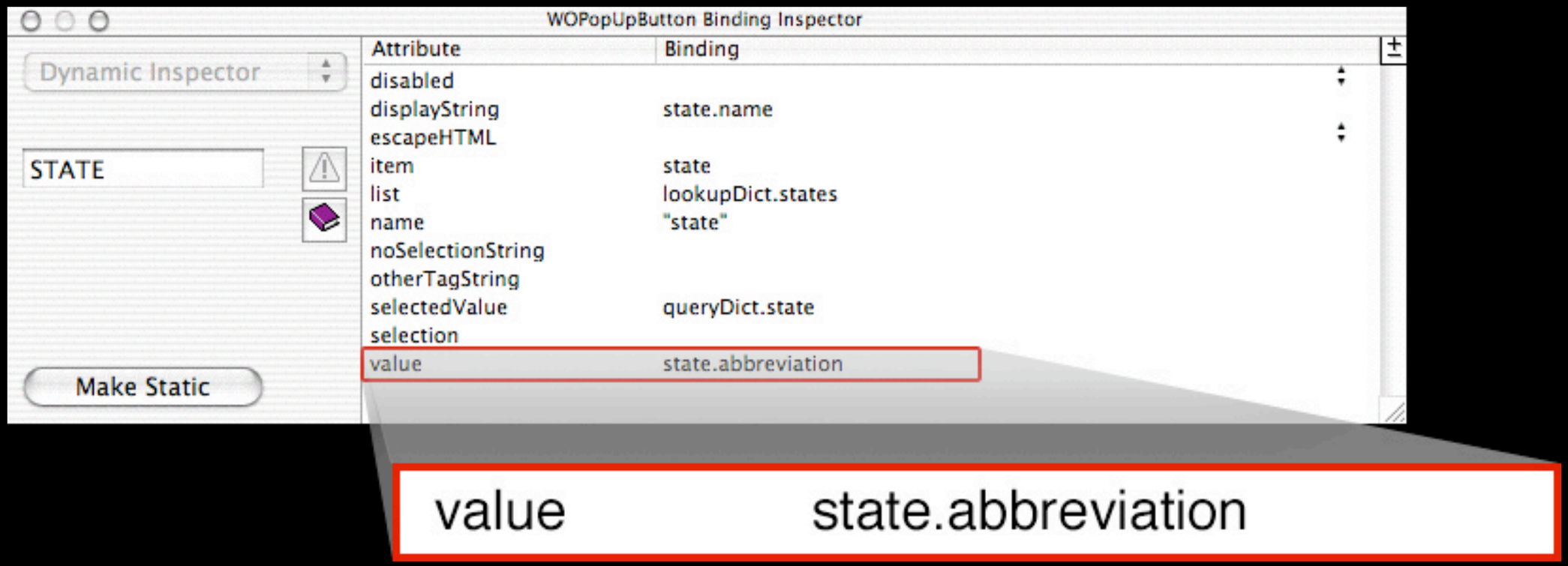
WOComponents

- HTML page templates: dynamic elements, static HTML, JavaScript, …
- Reusable and nestable
- Automatic synchronization and communication
- Java object supports each component
- Full access to session and application data

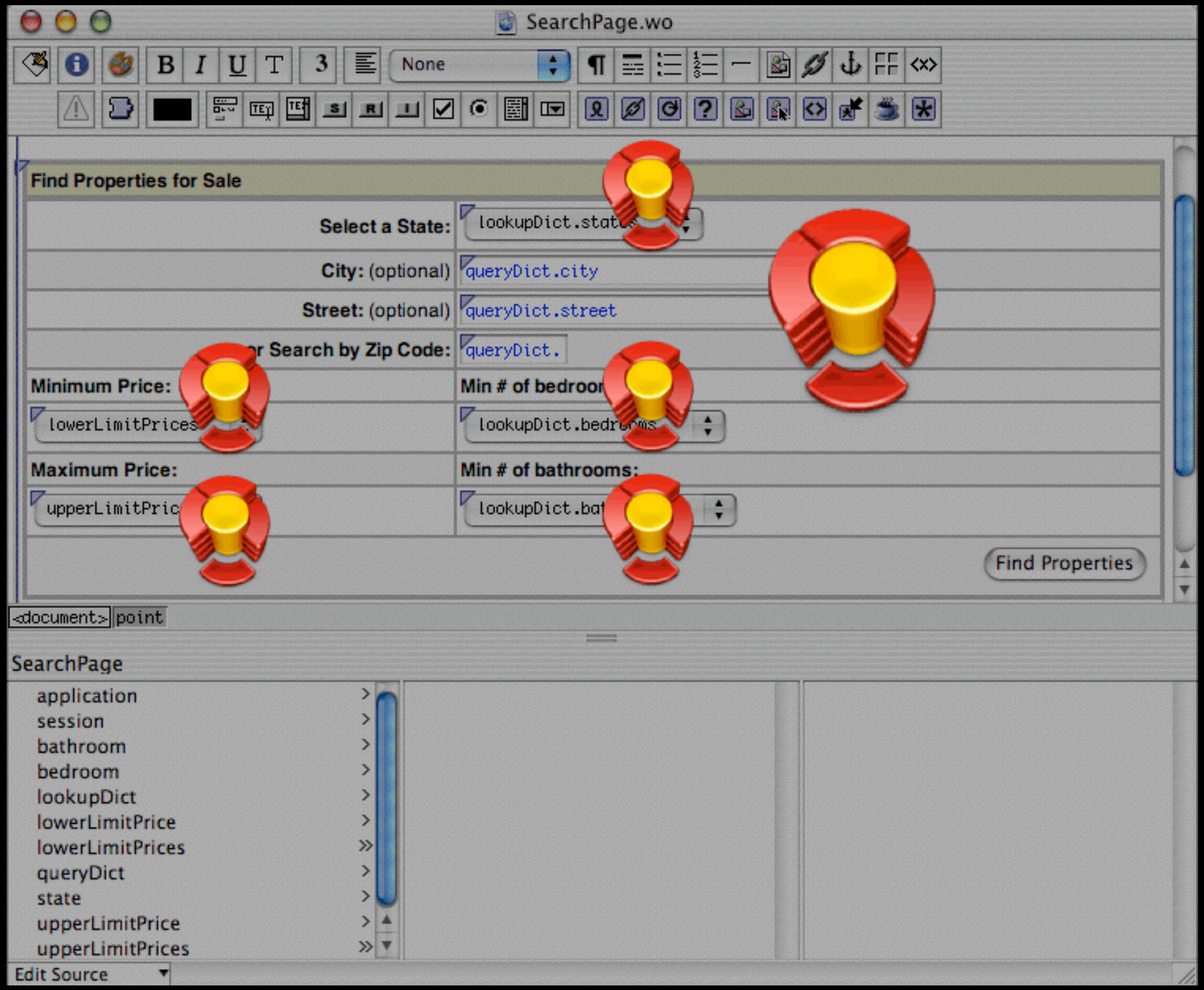
Dynamic Elements

- HTML tags whose values are determined at runtime
- Bindings provide values and other characteristics
- Binding values come from business objects, component objects, or static values

Dynamic Elements Bindings



Comes To Life at Runtime



Deployment

Deploying Applications

- WebObjects deployment
- Servlet deployment
- Session 605, WebObjects and J2EE
- Session 612, Enterprise Application Deployment

Wrap Up

WebObjects Technical Advantages

- You write less code
- You get a lot of functionality out of the box
- Objects you write are reusable
- Database-independent
- Innovation
- Flexible deployment

Reference Library

Documentation

Web Applications
ADC Home > Documentation > WebObjects >

Using EOModeler
ADC Home > Documentation > WebObjects >

Dynamic Elements Reference
ADC Home > Documentation > WebObjects >

Project Builder for WebObjects Developers
ADC Home > Documentation > WebObjects >

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services@apple.com
(800) 630 2775

http://developer.apple.com/wwdc2003/urls.html

For More Information

Reference Library

Resources

Product Information
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Enterprise-Level WebObjects Support And Consulting
http://www.apple.com/services/technicalsupport
http://www.apple.com/services/consulting

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Q&A

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http://developer.apple.com/wwdc2003/urls.html

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